

Internet Use by Radiography Teachers and Students at King Abdulaziz University: A Cross-Sectional Study

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Abstract— Recent times have seen an exponential increase in the use of the internet as a source of knowledge by students, teachers and researchers and in a variety of educational contexts. The purpose of this study is to document trends in the use of the internet as an educational tool, and, more specifically, its role in the diagnostic radiography. Based on the results of the study, we conclude that regular use of the internet is currently made by teachers and students. Hence, there is a need for initiatives for library authorities to improve their skills in information searching over the internet.

Keywords— *Internet Use; Independent Learning; Information Seeking; Radiology Education*

I. INTRODUCTION

Since the advent of the internet, there has been an exponential increase in the proliferation of information, which has brought significant changes in the education of medical professionals. The internet has been widely used as an information source for various educational and research purposes, as well for various other facets of life [1]. The field of health care and medicine is subject to continuous rapid changes because of the technological advancements and increase in scientific knowledge taking place constantly [2, 3, 4] and because of increases in dissemination of information in recent times [5, 6]. As a result, it is a requirement for those in the field to be well-informed on the changes taking place in their field, which the internet facilitates in important ways by serving as a source through which they can attain information related to those emerging changes. More specifically for students and teachers, the internet makes available a range of materials, including some interesting and invaluable cases through which students can attain further in-depth understanding of concepts relevant to the field [7].

The educational system of the Kingdom of Saudi Arabia is large, comprising a hundred colleges, and universities and a number of other higher educational institutions. In these educational institutions, libraries have served for decades as an important source of information and have supported major educational activities, such as teaching, learning and carrying out research. The internet, since its advent and increased proliferation, has taken over the use of libraries as a source because of the way it facilitates searching for information, the ease that it offers for retrieval of information and the quick and easy access that it provides to information. At the same time, it also provides access to a much wider scope of

information, which also serves as a reason for its increasing use by students and teachers alike when they need information. Internet facilities have thus become a part of the facilities that are provided by educational institutions in the Kingdom.

The King Abdul Aziz University is one such educational institution where internet service is provided alongside the library facility for students and teachers to attain the information that they need. The radiology department of this university is no exception to the provision of this facility. For literature searching, within the field of radiology, there is generally a need to search in a variety of databases, so that multiple aspects can be examined from not only general medical and health journals, but also discipline- specific journals [8]. This is necessary to attain a thorough understanding of a concept from various perspectives. Therefore, apart from the availability of text books and scientific resources in the library of the department, information can also be obtained from the internet facility provided within the department.

This study is an exploration the patterns of use of the internet by students and teachers of the diagnostic radiology department in the FAMS, King Abdulaziz University, Saudi Arabia. The current study is aimed at assessing the extent to which the internet is used in the department, while the main objective is to evaluate, analyze and document the trends of use of the internet by the students and teaching staff within the context of the department.

II. METHODOLOGY

The current study is a quantitative account with a cross-sectional survey design and makes use of a questionnaire as the primary data collection tool. The use of a quantitative design is for the purpose of revealing the prevalent trends in the department, because this design helps in studying a large population and generalizes the results on the basis of the findings. The use of cross-sectional design for the current study is for making inferences about the population of interest at a particular point in time [9]. A questionnaire was designed by the researchers for the purpose of collection of data for the study. The structured questionnaire designed for the study included some closed-ended questions. The use of closed-ended questions was for the purpose of categorizing the collected data in a clear manner and for the prevention of data being scattered in various different directions. The

questions in the questionnaire included demographic information, following which the participants were required to respond to questions related to the frequency and duration the participants used the internet, the purpose for which they used it most of the time and the method by which they learned the skills of searching for information over the internet. It also sought the response of the teachers and students on whether they were satisfied with the available internet facilities.

The questionnaires were then distributed to a total of 100 students and teachers in the diagnostic radiology department in the FAMS, King Abdulaziz University, on 25th September 2013, after ethical approval was obtained from the Chairman of the ethics and research committee in the FAMS for the administration of the questionnaire and for carrying out the study. Random sampling was the strategy employed for the study because it provides everyone with an equal chance to be a part of the study. Kitchenham (2002) states that in the random sampling strategy, each member of the target population has the probability of being a part of the sample of the study [10]. With such a sampling, the factors of subjectivity and biasness are also eliminated to a considerable extent, and it helps in generating a sample that can be considered as one that can serve as representative of the target population, thereby allowing the findings to be generalized [10].

One hundred students and teachers formed the sample of the study, of which 10 were teachers and 90 were students. The inclusion criterion for the study was to be a part of the diagnostic radiology department in the FAMS, King Abdulaziz University as a student or teacher. Apart from this inclusion criterion, there were no other exclusion or inclusion criteria for the study. The data gathered from the questionnaires was validated for consistency and completeness, and a quantitative analysis was carried out with the use of Microsoft Excel and the statistical package SPSS. There was no specific statistical test applied in the study, while only the categorization and compilation of results were looked at for observing trends related to the data gathered from the gathered responses. The results of the study are presented in the form of tables and a discussion on them is provided in the later part of the study.

III. RESULTS

An analysis of the data gathered from the 100 respondents who formed the sample of the study was conducted. Fifty-nine percent of the participants of the study were male, while 41% were females as shown in Table 1. The distribution of the sample in accordance with age group can be seen in Table 2. Apart from these demographic data, the study's focus was mainly to identify the trends related to the use of internet by the teachers and students in the diagnostic radiology department in the FAMS, which shown 90 per cent of the participants were students and 10 per cent of them were teachers Table 3. The clustered data from the questionnaires revealed that the majority of the participants in the study (79%) had been using the internet for more than 5 years. Table 4 provides a more detailed account related to the time period since the internet was used by the participants.

From the obtained data, it was also observed that using the internet was part of the daily routine for 85% of teachers and students who were part of the study, while 12% used it 2-3 times a day (Table 5). This suggested that a majority of the participants made use of the internet daily.

Table 1: Gender distribution of radiology teachers and students .

User's gender	Users	Percentages
Male	59	59%
Female	41	41%
Total	100	100%

Table 2: Distribution of age groups of radiology teachers and students.

Age groups(Years)	Users	Percentage
(15-20)	27	27%
(21-25)	61	61%
(26-30)	1	1%
(31-35)	1	1%
(36-40)	5	5%
(41-45)	3	3%
More than 46	2	2%
Total	100	100%

Table 3: Distribution of users' position in the radiology department, FAMS.

Position	Frequency	Percentage
Teacher	10	10%
Student	90	90%
Total	100	100%

Table 4: Duration of internet use by teaching staff and students of FAMS

Duration	Users	Percentage
Less than 6 months	4	4%
6 months-1 year	4	4%
(1-2) years	2	2%
(2-4) Years	9	9%
More than 4 years	79	79%
Any other	2	2%
Total	100	100%

Table 5: Frequency of internet use by teaching staff and students of FAMS

Frequency of using	Users	Percentage
Daily	85	85%
2-3 times a week	12	12%
2-3 times a month	3	3%
Once in a month	-	0%
Total	100	100%

The statistics also reveal that most responses (32%) were for using the internet for more than 20 hours per week, followed by those who used the internet for 10 to 20 hours per week (30%). Only 2% of respondents said that they used the internet for less than one hour a week. Additionally, the data collection also showed that majority of the participants (71%) of the study accessed the internet from their home, while 21.5% accessed it from their workplace or the university (Table 6).

The data also showed that although some of the respondents (34%) felt satisfied with the internet facilities that they were provided with, more participants were not fully satisfied (44% partially satisfied and 8% least satisfied) (see Table 8). In response to another question, half of the respondents felt that the internet could replace library services, if they were provided with access to downloadable books, because it is easier to locate the information needed over the internet compared to searching for it in the library. However, 45% of the participants of the study also felt that library services were not something that could be replaced by the internet (Table 9). Finally, the data collected also revealed that the most common method of acquisition of necessary skills for using the internet was self-instruction (Table 10), which showed that participants of the study were not taught the necessary skills for searching for their required information over the internet.

One of the important questions of the research study was attaining the trends related to the purpose for which the participants use the internet. Twenty-five percent of the participants each responded with research and education as their purpose for browsing the internet. This indicates that half of the respondents mainly use the Internet for educational purposes, while the other half of the participants used it for other purposes such as entertainment (22%) and communication (24%) (see Table 7). The responses suggest that the internet is a prominent part of the academic life of the teachers and students of the diagnostic radiology department in the FAMS of King Abdulaziz University.

Table 6: Most frequently used locations for the internet by teaching staff and students.

Place	Users	Percentage
At college or work	26	21.5%
At home	86	71.1%
At another place	9	7.4%
Total	121	100%

Table 7: Purposes for browsing internet by teaching staff and students.

Purpose	Users	Percentage
Research	25	25%
Entertainment	22	22%
Education	25	25%
Communication	24	24%
No Comments	4	4%
Total	100	100%

Table 8: Satisfaction with internet facilities of teaching staff and students.

Satisfaction	Users	Percentage
Fully	34	34%
Partially	44	44%
Least satisfied	8	8%
No Comments	14	14%
Total	100	100%

Table 9: Response to the question "Can the internet replace library services)?"

Internet can replace library services	users	Percentage
Yes	50	50%
No	45	45%
No Comments	5	5%
Total	100	100%

Table 10: Method of learning internet skills used by teaching staff and students.

Method	Users	Percentage
Trial and error method	12	10%
Guidance from colleagues and friends	22	18.1%
Training from college	6	5%
Self-instruction	70	57.8%
External courses	6	5%
No Comments	5	4.1%
Total	121	100%

An excellent style manual for science writers is [7].

IV. DISCUSSION

The results of this study reveal some of the trends of internet use by the students and teachers of the diagnostic radiology department of the FAMS. Similar studies carried out in other educational institutions around the world show similar patterns. From the data collected using questionnaires, it was found concluded out that 85% of the teachers and students in

FAMS make use of the internet each day for some purpose. It was also found that 71.1% of the study participants accessed the internet from their homes. This is similar to Becker's (1998) account on the use of the internet, which surveyed 2500 teachers from both public and private schools. The study found that 90% of the teachers had access to the internet, of which 59% had it at home as well, and thus, used it from there too [11].

From the obtained data for the current study, we found out that approximately half of the teachers and students used the internet for educational purposes, including for research purposes. Bavakutty and Salih (1999), in their study at Calicut University, also found that research, studying, and preparing for teaching, were common purposes for using the internet [12]. Becker also reported that the majority of the teachers made use of the internet for retrieving information resources for the purpose of preparing materials for their lessons and for preparing themselves [13]. In this respect, where the study reveals similar results, it shows that the internet has become a prominent educational source of information in current times in most of the educational institutions of the world.

Furthermore, Laite (2000), in a survey of 406 students in graduate and undergraduate courses in Shippensburg University, found that 37.7% of the graduate students used the internet once or twice daily, while 37.1% of the undergraduate students used it 1-2 times daily [13]. Frequent use of the internet for educational purposes, more than using the internet for entertainment purposes, was also reported in by Kumar and Kaur (2005) [14]. Such an increasing use of the internet for educational purposes suggest that the internet can replace library services for participants in the current study, with half of the respondents feeling that the internet can replace library services if downloadable books are made available to them, because the internet provides considerable ease in the search for information,; not only for the information itself but also within the information obtained. This shows a positive attitude towards the use of the internet. Israel (2013) also found that undergraduates of the Library Schools in Delta and Edo also had a positive attitude towards learning with the use of the internet [15].

V. CONCLUSION

Contemporary times have seen people more inclined to use the internet as an information and educational tool. In this age of information, the internet serves as an important and useful resource for the purpose of carrying out research and attaining needed information. Like in various other fields, radiology students and teachers are also dependent on the internet for a variety of their educational purposes, and thus make use of it for retrieval of information and for meeting their information needs. From the study, it is clear that the target group makes regular use of the internet for academic purposes. Keeping this in consideration, and also that many of the participants learned to search the internet themselves, we recommend that library authorities take initiative to improve the skills of internet information searching amongst students and teachers, so that they can further benefit from this useful source of information. These initiatives could take the form of the introduction of informal and formal programs

for teaching methods of searching for information over the internet or for enhancing search skills.

Conflict of Interest Disclosure

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